



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/644,227	08/19/2003	Karl Milton Taft III	372584-00102	5723
37509	7590	06/15/2004		
DECHERT LLP P.O. BOX 10004 PALO ALTO, CA 94303			EXAMINER BELL, BRUCE F	
			ART UNIT 1746	PAPER NUMBER

DATE MAILED: 06/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/644,227	TAFT ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	Bruce F. Bell	1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### **Status**

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is **FINAL**.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### **Disposition of Claims**

- 4) Claim(s) 1-50 is/are pending in the application.
  - 4a) Of the above claim(s) 1-29 and 45-50 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 30-37 and 39-44 is/are rejected.
- 7) Claim(s) 38 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### **Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 19 August 2003 is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### **Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### **Attachment(s)**

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____.
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>10/14/2003</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____.

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-29, drawn to a composite electrolyte and fuel cell, classified in class 429, subclass 33.
  - II. Claims 30-44, drawn to a method of producing a composite electrolyte, classified in class 252, subclass 62.2.
  - III. Claims 45-50, drawn to a method of producing a composite membrane, classified in class 521, subclass 27.

Inventions I and II are related as being a composite electrolyte and fuel cell, and a method of producing a composite electrolyte, respectively. The composite electrolyte and fuel cell can be made by a materially different method such as by forming the an inorganic cation exchange membrane and impregnating a solution of silica based material, solvent dispersant and polymer into the membrane.

Inventions I and III are related as a composite electrolyte and fuel cell and method of producing a composite membrane. The composite electrolyte and fuel cell can be made by a materially different method such as by mixing the materials together and filter pressing the material to make the composite electrolyte and fuel cell.

Inventions II and III are related as a method of making a composite electrolyte and a method of making a composite membrane. Inventions II and III are different from each other in that the invention of group III requires different processing steps such as grinding, heating, degassing, casting and curing the film produced which is not required for making the composite electrolyte in the group II invention.

The inventions are distinct, each from the other because of the following reasons:

2. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
3. Because these inventions are distinct for the reasons given above and the search required for Group III is not required for Group II, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Mr. Harmonhinder Bedi on May 15, 2004 a provisional election was made without traverse to prosecute the invention of II, claims 30-44. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-29 and 45-50 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.
5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

#### **DETAILED ACTION**

##### ***Double Patenting***

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA

1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 30-37, 42-44 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 21-27 and 31-33 of U.S. Patent No. 6,630265. Although the conflicting claims are not identical, they are not patentably distinct from each other because even though the patent application is disclosing a solvent dispersant and the patent is only disclosing a solvent, one having ordinary skill in the art knows that solvents are used as dispersants in such compositions. Further, the percentage of inorganic cation exchange material as set forth in the instant claims is found in the dependent limitations of the patented claims. Therefore, the obvious-type double patenting is proper.

#### ***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 30, 31, 33-37, 39-44 are rejected under 35 U.S.C. 102(e) as being anticipated by Tsai et al (U.S. Patent No. 6562891).

Tsai et al disclose a polymer/clay composite prepared by admixing an intercalated clay with monomers or oligomers of a matrix polymer. The polymer matrix and clay are uniformly dispersed with the clay being present in an amount ranging between 0.1% to 30% by weight, based on the total weight of the polymer composite. See col. 2, lines 54-65. The clay being used is a layered silicate having a cation-exchange capacity and is chosen from smectite clay, vermiculite, mica, montmorillonite, saponite, beidellite, nontronite, and hectorite. See col. 2, line 67 – col. 3, line 6. The clay is mixed with a matrix polymer such as polystyrene, styrene-acrylonitrile copolymer, acrylonitrile-butadiene-styrene copolymer. See col. 3, lines 7-23. The clay is modified by so that it will adhere to the polymer matrix, by reacting the clay with a modifier of an amido-compound. A clay being modified in such a way has improved heat resistance, improved mechanical strength and decreased water permeability. See col. 3, lines 33-55.

Therefore, Tsai et al anticipates the applicants' instant invention as shown by the teachings in the Tsai et al patent shown above. Further, even though separate materials for both the inorganic cation exchange material and for the silicate, are not disclosed, clays, especially those as set forth in the Tsai patent are known for having inorganic cation exchange properties as well as for having silicate properties. Therefore, since both properties and materials are present, the patent

by virtue of using such a clay inherently meets the conditions as set forth in applicants' instant claims.

***Allowable Subject Matter***

10. Claim 38 is allowable over the prior art of record.
11. Claim 38 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
12. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach and/or suggest using a clay modified with the modifier materials as set forth in the instant claim 38.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bruce F. Bell whose telephone number is 571-272-1296. The examiner can normally be reached on Monday-Friday 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BFB  
June 14, 2004

*Bruce Bell*  
Bruce F. Bell  
Primary Examiner  
Art Unit 1746